EMERGENCY STROKE TREATMENT

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INDIANA EPIDEMIOLOGY

- 7th highest stoke rate in the country
- 18th in mortality from stroke
- 2% of Indiana population living with sequelae of stroke
- Cost of medical for stroke in Indiana is $300 million

NEED FOR STROKE TASK FORCE

- Epidemiologic data
- Lack of public awareness
- Lack of assertiveness with stroke treatment
- Stroke center certification
- Availability of federal funds for improvement of stroke care

LEGISLATION

- Strongly supported by AHA/ASA
- Failed in 2003 session
- Governor O'Bannon died from hemorrhagic stroke
- Legislation passed in 2004
- IC 16-41-41 created Indiana Stroke Prevention Task Force

COMPOSITION

- Neurologist
- Cardiologist
- Neuroradiologist
- ER physician
- Registered nurse
- Rehab therapist
- EMS
- Hospital administrator
- Health commissioner
- Secretary of family services
- Stroke support organization(2)
- Indiana minority health coalition
- Stroke survivor

STROKE TASK FORCE

- Assess the needs for stroke care in Indiana
- Educate the public regarding stroke
- Maintain awareness of the most effective strategies for the medical intervention in stroke
- Advise the DOH of grant opportunities for health care providers related to stroke
- Provide guidelines for the care of stroke patients

MANAGEMENT OF STROKE

- Prevention
- Recognition
- Treatment
  - Acute
  - Long-term
- Hospital Systems

GUIDELINES

- Risk Factors
- Transient ischemic attack
- Stroke

FORMAT

- Introduction
- Background
- Recommendations

BACKGROUND

- Stroke Council of the AHA
- Brain Attack Coalition
- ASA Task Force on the Development of Stroke Systems

RECOMMENDATIONS

- Derived from standard evidence-based medicine assessment criteria
- Provide a basis for the management of stroke
- Minimum standard for such management
- Benchmark for initiating stroke management
- Suggest that level of care may vary with level of expertise and available technology

ACUTE TREATMENT

- 3% of stroke patients are receiving thrombolytics
- Patient's wait an average of 22 hours before seeking treatment
- Still some apprehension regarding thrombolytics by health care providers

RECOGNITION: PATIENT

- 1% of people surveyed were concerned about stroke
- 40% of people surveyed could name the most common stroke symptom
- 19% are aware that stroke is preventable
- 38% do not know where in the body a stroke occurs
- 92% do not know what a TIA is
- 80% would call 911 if they thought someone was having a stroke

RECOGNITION: EMS

- 65% of patients diagnosed by dispatcher as not having a stroke, actually did
- 52% of actual strokes were dispatched as such
- 72% of actual strokes were identified by EMT or paramedic

PROBLEMS

- Data is relatively old
- No new functional assessments
  - Public
  - EMS
- Recent data indicate an 18% reduction in stroke mortality since 1993
- However, only a 1% reduction in the incidence of stroke

RESOLUTION

- Educate the public
- Enhance EMS response
- Establish hospital protocols

EDUCATE PUBLIC

- Who
  - Special interest groups (ASA, NSA)
  - Hospitals
  - Physicians
- How
  - Pamphlets
  - Programs
  - Screenings
  - Office appointments
- What
  - Risk factors
  - Symptoms
  - Treatment
  - Consequences

ENHANCE EMS

- Establish stroke as an emergency
- Train personnel in recognition
- Develop communication protocols between EMS and hospital ER
- Develop protocols for transport of patient

EMERGENCY

- Dispatch ambulance as if this were a heart attack or trauma
- Expedite evaluation in field
- Transport to hospital ASAP

TRAINING

- Dispatchers
  - Recognition of symptoms (down, unconscious, confused, dizziness)
  - Expedite arrival
  - Send paramedic if possible
- EMT/paramedics
  - Recognition of signs
  - Treatment in field
  - Transport quickly

CINCINNATI STROKE SCALE

- Language
- Facial weakness
- Arm weakness (drift)

TRANSPORT

- Quickly
- Check vital signs
- Oxygen
- Obtain IV access
- Finger stick sugar check
- Cardiac monitor

COMMUNICATION

- Establish contact with ER ASAP
- Provide historical data including time of onset of symptoms
- Estimated time of arrival

EMERGENCY ROOM

- Stroke protocols
- Stroke standing orders
- Stroke teams

PROTOCOLS

- A standardized set of instructions for patient management in a given situation
  - Evaluation of the patient
  - Treatment
  - Identification of risk factors
  - Nursing management
- Much documentation exists indicating improved patient outcomes
  - Increase use of medications and treatments
  - Improved patient assessment
  - Reduction in unnecessary tests
  - Shorter length of stay

STANDING ORDERS

- Administration of tPA
- Management of patient after tPA
- Subacute management regardless of the use of tPA

TEAMS

- Enable patient evaluation by staff experienced in the diagnosis and management of stroke

- Composition
  - Emergency physician
  - Neurologist
  - Radiologist
  - Nurse
  - Radiology technician
  - pharmacist

TEAMS (cont.)

- Members carry pager for rapid response
- Once activated, members are prepared for communication in their departments
- Members may be rotated on a specified schedule
- Response should be within 15 minutes
- Availability should be 24/7

ER: TRIAGE

- Ambulance – should have already notified ER
- Walk-in
  - Symptoms
  - Time of onset
- Suspicion of stroke should be sent to room for evaluation IMMEDIATELY

ER: EVALUATION

- Should occur within 10 minutes of arrival
- General exam
  - Vital signs
  - Neck
  - Cardiac
- Neurological
  - Ideally, NIH stroke scale

EVALUATION (cont.)

- Laboratory
  - Blood sugar
  - CBC
  - BMP
  - Coag's
- CT brain
- ECG

NEUROLOGIC CONSULTATION

- By phone
- In person

TREATMENT

- tPA
  - Patient meets criteria
  - Neurologist concurs
- ASA
  - No tPA
  - No hemorrhage intracranially
  - No medical contraindication
  - No problem swallowing
- Alternative therapies
  - Recommended by neurologist
  - Available facility

SYMPTOMS

- Unilateral sensory or motor impairment
- Trouble with speech or language
- Visual changes
- Gait disturbance
- Dizziness
- Confusion
- Loss/alteration of consciousness

DIFFERENTIAL DIAGNOSIS

- Metabolic disturbance
- Intoxication
- Migraine
- Seizure
- Encephalopathy
- Trauma
- Subdural hemotoma
- Brain infection
- Brain tumor

REACTION

- Examine patient promptly
- If any stroke symptoms, assume stroke until proven otherwise
- Initiate work-up immediately (i.e. STAT)
- Consult neurologist

IN PRIMARY CARE OFFICE

- Examine patient
  - Cincinnati stroke scale
  - Cardiac
  - Vital signs
- Obtain history
  - Symptoms
  - Time of onset
- Transfer to ER by ambulance
- Notify ER physician of situation

WHAT CAN YOU DO?

- Educate your patients
- Recognize and manage risk factors in your patients
- Suspect stroke
- Treat stroke as an emergency
- Think about tPA
- Develop alliances with other hospitals if yours cannot accommodate stroke management

WHAT ISPTF WILL DO

- Continue to spread the word
- Attempt to equilibrate stroke care across the entire state
- Monitor latest trends in stroke care
- Continually update the Guidelines
- Provide support and guidance to all health care providers regarding management of stroke

PUBLICATION

- Indiana state department of health
  - www.in.gov/isdh/publications/pdfs/IndianaStroke/guidelines.pdf
- Other web-sites
  - EMS
  - Nursing
  - Specialty organizations
  - Stroke support groups
  - American Heart Association
  - Great Lakes Stroke Coalition